



2SB772

PNP SILICON TRANSISTOR

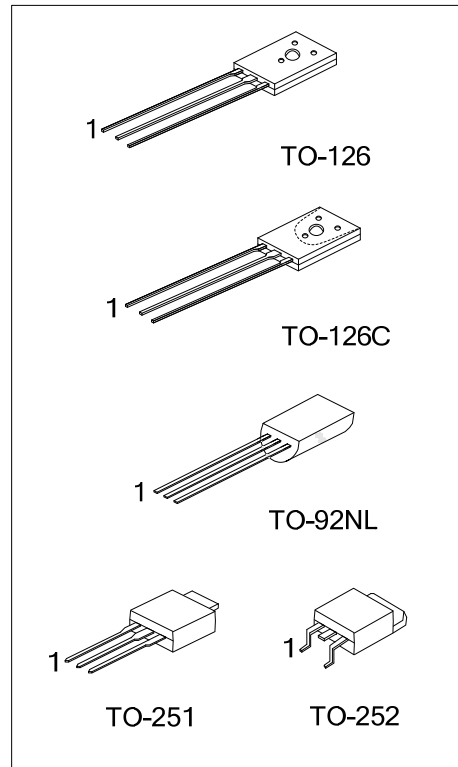
MEDIUM POWER LOW VOLTAGE TRANSISTOR

DESCRIPTION

The UTC **2SB772** is a medium power low voltage transistor, designed for audio power amplifier, DC-DC converter and voltage regulator.

FEATURES

- * High current output up to 3A
- * Low saturation voltage
- * Complement to 2SD882



ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|-----------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SB772L-x-T60-K | 2SB772G-x-T60-K | TO-126 | E | C | B | Bulk |
| 2SB772L-x-T6C-K | 2SB772G-x-T6C-K | TO-126C | E | C | B | Bulk |
| 2SB772L-x-TM3-T | 2SB772G-x-TM3-T | TO-251 | B | C | E | Tube |
| 2SB772L-x-TN3-R | 2SB772G-x-TN3-R | TO-252 | B | C | E | Tape Reel |
| 2SB772L-x-TN3-T | 2SB772G-x-TN3-T | TO-252 | B | C | E | Tube |
| 2SB772L-x-T9N-B | 2SB772G-x-T9N-B | TO-92NL | E | C | B | Tape Box |
| 2SB772L-x-T9N-K | 2SB772G-x-T9N-K | TO-92NL | E | C | B | Bulk |
| 2SB772L-x-T9N-R | 2SB772G-x-T9N-R | TO-92NL | E | C | B | Tape Reel |

| | |
|--|--|
| <p>2SB772L-x-T60-K</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Free</p> | <p>(1) K: Bulk, T: Tube, R: Tape Reel (2) T60: TO-126, T6C: TO-126C, TM3: TO-251, TN3: TO-252, T9N: TO-92NL (3) x: refer to Classification of h_{FE2} (4) G: Halogen Free, L: Lead Free</p> |
|--|--|

■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|---------------------------|----------------|-----------|------------|------------------|
| Collector-Base Voltage | | V_{CB0} | -40 | V |
| Collector-Emitter Voltage | | V_{CE0} | -30 | V |
| Emitter-Base Voltage | | V_{EB0} | -5 | V |
| Collector Current | DC | I_C | -3 | A |
| | Pulse | I_{CP} | -7 | A |
| Base Current | | I_B | -0.6 | A |
| Collector Dissipation | TO-92NL | P_C | 0.5 | W |
| | TO-126/TO-126C | | 1 | |
| | TO-251/TO-252 | | 1 | |
| Junction Temperature | | T_J | +150 | $^\circ\text{C}$ |
| Storage Temperature | | T_{STG} | -55 ~ +150 | $^\circ\text{C}$ |

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

| PARAMETER | | SYMBOL | RATING | UNIT |
|------------------|-----------------|---------------|--------|--------------------|
| Junction to Case | TO-126/ TO-126C | θ_{JC} | 12.5 | $^\circ\text{C/W}$ |
| | TO-251/ TO-252 | | 12.5 | |
| | TO-92NL | | 25 | |

■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|------|-------|------|
| Collector-Base Breakdown Voltage | BV_{CB0} | $I_C = -100\mu\text{A}, I_E = 0$ | -40 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CE0} | $I_C = -1\text{mA}, I_B = 0$ | -30 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EB0} | $I_E = -100\mu\text{A}, I_C = 0$ | -5 | | | V |
| Collector Cut-Off Current | I_{CB0} | $V_{CB} = -30\text{V}, I_E = 0$ | | | -1000 | nA |
| Collector Cut-Off Current | I_{CE0} | $V_{CE} = -30\text{V}, I_B = 0$ | | | -1000 | nA |
| Emitter Cut-Off Current | I_{EB0} | $V_{EB} = -3\text{V}, I_C = 0$ | | | -1000 | nA |
| DC Current Gain (Note 1) | h_{FE1} | $V_{CE} = -2\text{V}, I_C = -20\text{mA}$ | 30 | 200 | | |
| | h_{FE2} | $V_{CE} = -2\text{V}, I_C = -1\text{A}$ | 100 | 150 | 400 | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = -2\text{A}, I_B = -0.2\text{A}$ | | -0.3 | -0.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C = -2\text{A}, I_B = -0.2\text{A}$ | | -1.0 | -2.0 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE} = -5\text{V}, I_C = -0.1\text{A}$ | | 80 | | MHz |
| Output Capacitance | C_{OB} | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$ | | 45 | | pF |

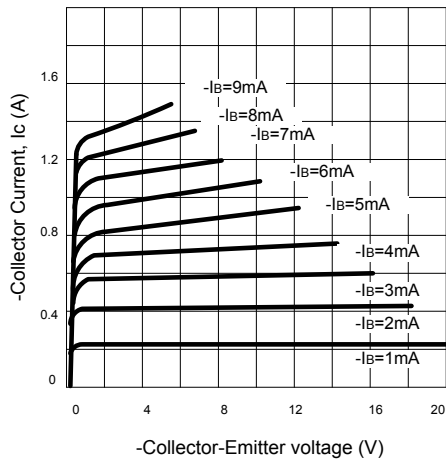
Note 1: Pulse test: $P_W < 300\mu\text{s}$, Duty Cycle $< 2\%$

■ CLASSIFICATION OF h_{FE2}

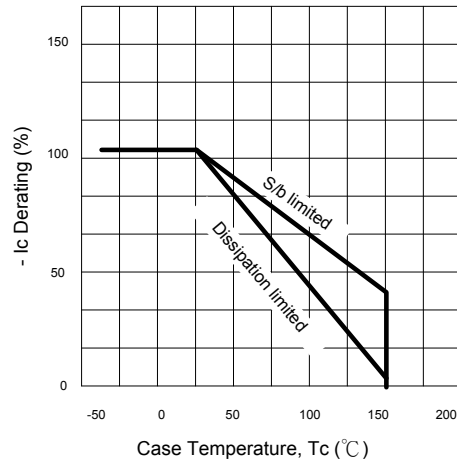
| RANK | Q | P | E |
|-------|-----------|-----------|-----------|
| RANGE | 100 ~ 200 | 160 ~ 320 | 200 ~ 400 |

TYPICAL CHARACTERISTICS

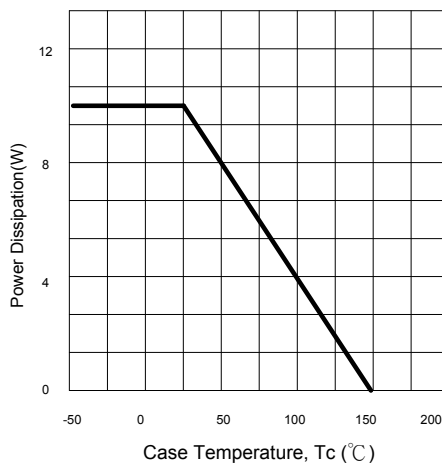
Static Characteristics



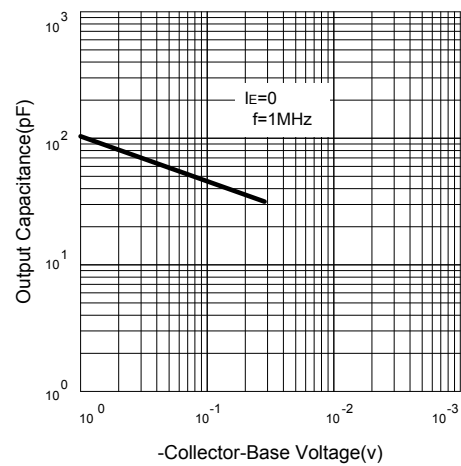
Derating Curve of Safe Operating Areas



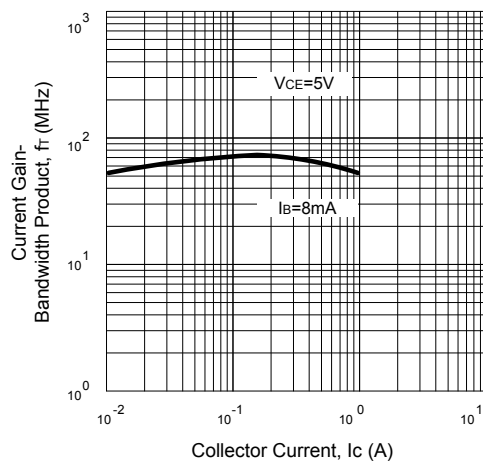
Power Derating



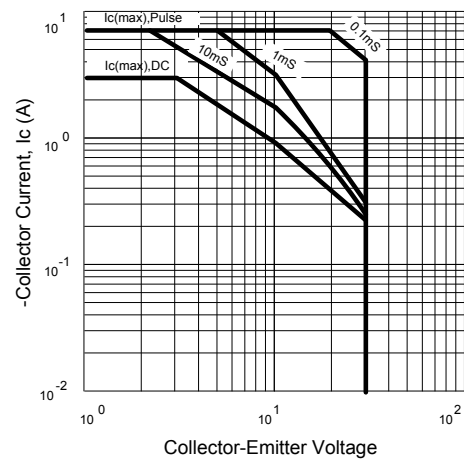
Collector Output Capacitance



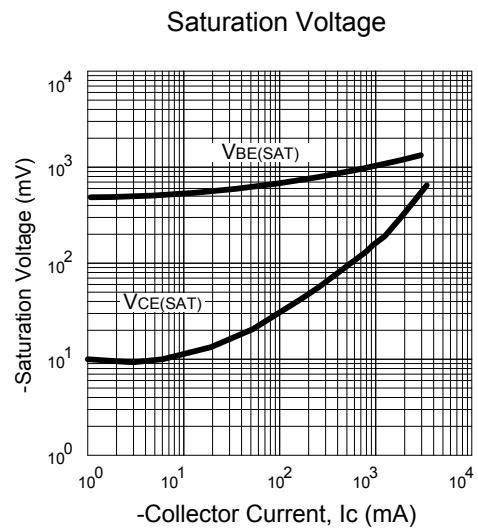
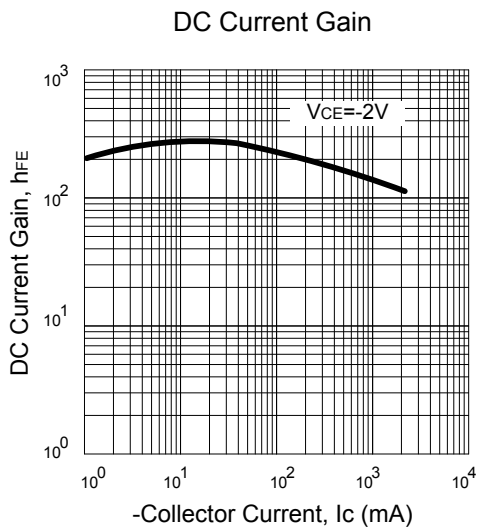
Current Gain-Bandwidth Product



Safe Operating Area



■ TYPICAL CHARACTERISTICS(Cont.)



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